

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (Previously Amended) A duct assembly for coupling a pair of components in fluid connection, the duct assembly comprising:

a first portion having an end portion;

a second portion in fluid connection with the first portion, the second portion being relatively more flexible than the first portion, the end portion being received into the second portion, the second portion including a reinforcing helix bonded thereto; and

DI a discrete support collar coupled to an outer perimeter of the second portion, located adjacent to the intersection of the first and second portion, the support collar being configured to prevent the formation of a stress riser at an intersection between the first and second portion to thereby render the intersection less susceptible to tearing in response to repeated flexing of the second portion.

2. (Original) The duct assembly of Claim 1, wherein the support collar has a cross-section with a generally flat base.

3. (Original) The duct assembly of Claim 1, wherein the support collar has a generally circular cross-section.

4. (Original) The duct assembly of Claim 1, wherein the support collar has a generally hollow cross section.

5. (Cancelled)

6. (Cancelled)

7. (Previously Presented) The duct assembly of Claim 1, wherein the diameter of the end portion is approximately equal to an outside diameter of the support collar.

8. (Cancelled)

DI 9. (Withdrawn) A duct assembly for coupling a pair of components in fluid connection, the duct assembly comprising:

a duct portion; and

a sleeve portion bonded to an exterior perimeter of the duct portion, the sleeve portion being coupled to a predetermined area of the duct portion and providing the predetermined area with a predetermined characteristic.

10. (Withdrawn) The duct assembly of Claim 9, wherein the sleeve portion is formed from polyester and the predetermined characteristic is abrasion resistance.

11. (Withdrawn) The duct assembly of Claim 9, wherein the sleeve portion is formed from a wove material.

12. (Withdrawn) The duct assembly of Claim 9, wherein the sleeve portion is formed from a material selected from a group of materials consisting of steel, carbon graphite, Kevlar and Nextel.

13. (Withdrawn) The duct assembly of Claim 9, wherein the duct portion is formed from a plurality of plies that are bonded together with a first adhesive material and the sleeve portion is bonded to the duct portion with a second adhesive material, the duct assembly being fabricated in a manner such that the first and second adhesive materials are cured in a common curing process.

14. (Withdrawn) The duct assembly of Claim 9, wherein the duct portion is formed from a plurality of plies that are bonded together with a first adhesive material and the sleeve portion is bonded to the duct portion with a second adhesive material, the duct assembly being fabricated in a manner such that the first adhesive material is cured prior to the curing of the second adhesive material.

15. (Withdrawn) The duct assembly of Claim 14, wherein the second adhesive material is a silicone adhesive.

16. (Cancelled)

17. (Cancelled)

18. (Previously Presented) A method for forming a hose assembly for coupling a plurality of components in fluid connection, the method comprising the steps of:

forming a rigid duct structure and a flexible duct structure; and

bonding the flexible duct structure to an end of the rigid duct structure to produce a clampless flexible fluid connection that permits an end of the flexible duct structure opposite the rigid duct structure to be moved relative to the rigid duct structure.

19. (Original) The method of Claim 18, further comprising the steps of:

providing an elastomeric attachment sleeve; and

bonding the elastomeric attachment sleeve to an end of the rigid duct

structure opposite the flexible duct structure.

DI 20. (Original) The method of Claim 18, wherein the flexible duct structure includes a plurality of bellows.

21. (Original) The method of Claim 20, wherein the plurality of bellows are reinforced with a reinforcing member.

22. (Original) The method of Claim 21, wherein the reinforcing member is formed from a thermoplastic.

23. (Original) The method of Claim 18, wherein an end of the rigid duct structure includes a beaded end portion.

24. (Original) The method of Claim 18, wherein the rigid duct structure is formed from a material selected from a group of materials consisting of metals, plastics, and composites.

25. (Previously Presented) A method for forming a hose assembly for coupling a plurality of components in fluid connection, the method comprising the steps of:

forming a flexible duct structure from an elastomeric material;

forming first and second rigid duct structures, the first and second rigid duct structures being formed to be relatively more rigid than the flexible duct structure;

coupling the first rigid duct structure to a first end of the flexible duct structure;

coupling the second rigid duct structure in fluid connection with a second end of the flexible duct structure such that the flexible duct structure permits the first and second rigid duct structures to be moved relative to one another; and

bonding an attachment sleeve to an end of the second rigid duct structure opposite the flexible duct structure such that the attachment sleeve is in fluid connection with the second rigid duct structure and the flexible duct structure.

26. (Previously Presented) The method of Claim 25, wherein the attachment sleeve is made from elastomeric material.

27. (Previously Presented) A method for forming a reinforced flexible duct assembly comprising the steps of:

providing a duct member;

determining a diameter of the duct member;

selecting a reinforcement member and a reinforcement pitch based on the diameter of the duct member; and

bonding the reinforcement member to an exterior surface of the duct member in a helix such that a pitch of the helix is equal to the reinforcement pitch,

wherein the step of selecting the reinforcement member and the reinforcement pitch further includes the steps of:

selecting a reinforcing member having a diameter of about 0.15 inch and setting the reinforcement pitch equal to about three-quarters ($\frac{3}{4}$) of an inch if the diameter of the duct member is greater than seven and one-half ($7\frac{1}{2}$) inches;

otherwise, selecting a reinforcing member having a diameter of about one-eighth ($\frac{1}{8}$) inch and setting the reinforcement pitch equal to about three-quarters ($\frac{3}{4}$) of an inch if the diameter of the duct member is greater than five and one-half ($5\frac{1}{2}$) inches;

otherwise, selecting a reinforcing member having a diameter of about 0.10 inch and setting the reinforcing pitch equal to about seven-eighths ($\frac{7}{8}$) of an inch if the diameter of the duct member is greater than four (4) inches;

otherwise, selecting a reinforcing member having a diameter of about 0.10 inch and setting the reinforcing pitch equal to about three-quarters ($\frac{3}{4}$) of an inch if the diameter of the duct member is greater than about three and one-half ($3\frac{1}{2}$) inches;

otherwise, selecting a reinforcing member having a diameter of about three-thirty-seconds ($\frac{3}{32}$) of an inch and setting the reinforcing pitch equal to about three-quarters ($\frac{3}{4}$) of an inch if the diameter of the duct member is greater than about two and one-half ($2\frac{1}{2}$) inches;

otherwise, selecting a reinforcing member having a diameter of about three-thirty-seconds ($\frac{3}{32}$) of an inch and setting the reinforcing pitch equal to about five-eighths ($\frac{5}{8}$) of an inch if the diameter of the duct member is greater than about one and three-quarters ($1\frac{3}{4}$) inches;

otherwise, selecting a reinforcing member having a diameter of about five-sixty-fourths ($\frac{5}{64}$) of an inch and setting the reinforcing pitch equal to about one-half ($\frac{1}{2}$) inch if the diameter of the duct member is greater than about one and one-quarter ($1\frac{1}{4}$) inches;

51 otherwise, selecting a reinforcing member having a diameter of about one-sixteenth ($\frac{1}{16}$) of an inch and setting the reinforcing pitch equal to about seven-sixteenths ($\frac{7}{16}$) if the diameter of the duct member is greater than about one (1) inch; and

otherwise, selecting a reinforcing member having a diameter of about one-sixteenth ($\frac{1}{16}$) of an inch and setting the reinforcing pitch equal to about three-eighths ($\frac{3}{8}$).

28. (Currently Amended) A duct assembly comprising:

a first tube-shaped portion comprising a flexible thermoplastic helix bonded to a sleeve of a flexible material, wherein at least one inner or outer layer of the tube-shaped portion is an thermoplastic elastomer; and

a second tube-shaped portion having an end affixed to ~~adjacent~~ the first tube-shaped portion, comprising a composite ~~thermoset fiber-reinforced~~ material and having at least one inner or outer layer of a thermoplastic elastomer that extends over at least part of its length adjacent the first tube-shaped portion, wherein the layers of the ~~thermoplastic elastomer of the first and second tube-shaped portions are co-continuous~~ co-planar.

29. (Previously presented) The duct assembly of Claim 28, wherein the second tube-shaped portion is comprised of at least two layers of ~~thermoset fiber-reinforced~~ composite material, wherein the layer farthest inward extends further in the direction of the first-tube shaped portion than the layer of ~~fiber-reinforced material~~ composite material outward of such layer.
